



# 2015 Joshua Tree National Park **NIGHT SKY FESTIVAL**

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tranquility stars wonder place meaning beauty

# SCHEDULE OF EVENTS

## Friday, October 16, 2015



5:00 pm **Opening Remarks**  
by Park Superintendent David Smith  
*Sky's the Limit\**



6:00 pm **Viewing the Vexing Void**  
with Dark Ranger Kevin Poe  
at *Sky's the Limit\**

7:00 pm **Night Sky Evening Program**  
*Jumbo Rocks Campground Amphitheater*



7:00 pm-10:00 pm **Night Sky Viewing**  
multiple locations: *Sky's the Limit\**, *Twin Tanks*,  
and *Cottonwood Campground Amphitheater*

7:30 pm **Night Life: Nocturnal Animals of Joshua Tree**  
hike with Wildlife Biologist Kristen Lalumiere  
Note: space is limited and advance reservations are  
required; call 760-367-5522 to sign up.

## Saturday, October 17, 2015

9:00 am-12:00 noon **Model Rocket Building and Launching**  
*Sky's the Limit*

Rocket kits and motors will be available for  
purchase, first-come, first-served.

10:00 am-3:00 pm **Moon Rocks and Meteorites**  
*on display at the Oasis Visitor Center*

10:00 am-3:00 pm **Safe Solar Viewing**  
*through the solar telescopes at the Oasis Visitor Center*

12:00 noon-2:00 pm **Book & Poster Signing**  
by Tyler Nordgren, author of *Stars Above, Earth Below*  
*Oasis Visitor Center*

1:00 pm **Night Songs: Music for Twilight and Beyond**  
with Jay Cravath, Cultural Director, Chemehuevi Tribe  
*Black Rock Nature Center*

1:00 pm-10:00 pm **Night Sky Photography Class**  
Note: This class is offered by the Desert Institute,  
a park partner. Space is limited and pre-registration is  
required. See <http://www.joshuatree.org/desert-institute/>

2:00 pm **"Earth as a Peppercorn" Ranger-led Hike**  
*Boy Scout Trail south trailhead, inside the West Entrance*

3:00 pm **Women in Science Panel Discussion**  
*Black Rock Nature Center*

4:00 pm **Sailing on Alien Tides:**  
**Behind the Scenes of a NASA Europa Mission**  
with Julie Rathbun  
*Black Rock Nature Center*



6:00 pm—**Stars Above, Earth Below**  
**Astronomy in America's National Parks**  
with Tyler Nordgren  
*Sky's the Limit\**

7:00 pm **Night Sky Evening Program**  
*Jumbo Rocks Campground Amphitheater*



7:00 pm-10:00 pm **Night Sky Viewing**  
multiple locations: *Sky's the Limit\**, *Twin Tanks*,  
and *Cottonwood Campground Amphitheater*

## Sunday, October 18, 2015

9:00 am-12:00 noon **Model Rocket Building & Launching**  
*Sky's the Limit*

Rocket kits and motors will be available for  
purchase, first-come, first-served.

10:00 am-3:00 pm **Safe Solar Viewing**  
*through the solar telescopes at the Oasis Visitor Center*

11:00 am **"Earth as a Peppercorn" Ranger-led Hike**  
*Boy Scout Trail south trailhead, inside the West Entrance*

1:00 pm **Just 42**  
with Dark Ranger Kevin Poe  
*Black Rock Nature Center*

2:00 pm **Dark Skies in Joshua Tree National Park**  
with Stacy Manson  
*Black Rock Nature Center*

3:00 pm **Cosmic Horizons**  
with Angie Richman  
*Black Rock Nature Center*

4:00 pm **Swearing-in of Night Sky Junior Rangers**  
and  
**Closing Ceremonies**  
*Black Rock Nature Center*

Get your Junior Ranger Night Explorer activity books in  
advance at park visitor centers, or download your own copy  
online at <http://www.nature.nps.gov/nightlyouth.cfm>



**Ride the free shuttle to events  
at Sky's the Limit**

**Friday from 4:30 pm - 10:00 pm**  
and

**Saturday from 5:00 pm -10:00 pm**

Due to limited parking at Sky's the Limit, we  
strongly encourage visitors to park at the Oasis  
Visitor Center and take the free shuttle to evening  
events at Sky's the Limit. The shuttle will pick up  
passengers approximately every 15 minutes.



# FEATURED PROGRAMS

## **"Viewing the Vexing Void" with Kevin Poe**

*6:00 pm Friday at Sky's the Limit*

Space is REALLY big, which is scary, and VERY empty, which is terrifying! This is relevant when you consider the futility of space travel and the chance that life elsewhere might be friendly. But don't panic: the universe is also beautiful and intriguing.

## **"Night Songs: Music for Twilight and Beyond" with Jay Cravath**

*1:00 pm Saturday at Black Rock Nature Center*

Dr. Cravath will perform night songs during this event. Using guitar, harmonica and dulcimer, the Chemehuevi Tribe's Cultural Director will include, lullabies, love songs and even a couple pieces from Stephen Sondheim's musical: "A Little Night Music." Oh, and be prepared to sing along on a few.

## **"Sailing on Alien tides: Behind the Scenes of a NASA Europa Mission" with Julie Rathbun**

*4:00 pm Saturday at Black Rock Nature Center*

Europa is one of the 4 major Galilean satellites of Jupiter. It's about the size of the Earth's moon and is covered in ice. There is strong evidence of a global ocean beneath Europa's icy crust that is moved by tidal energy, making this moon one of the best known spots for potential alien life.

## **"Stars Above, Earth Below: Astronomy in America's National Parks" with Tyler Nordgren**

*6:00 pm Saturday at Sky's the Limit*

Nearly 60% of Americans cannot see the Milky Way from their house. For visitors to America's national parks, a sky full of stars is now as rare as the glaciers and grizzly bears that brought them there in the first place. National parks are our window to the Universe.

## **"Just 42" with Kevin Poe**

*1:00 pm Sunday at Black Rock Nature Center*

Astronomy math is hard, but the science itself is much simpler. If you exclude Earth, there are only 42 things you need to know to understand the rest of the universe! Get a semester's worth of astronomy in a single afternoon.

## **"Dark Skies in Joshua Tree National Park" with Stacy Manson**

*2:00 pm Sunday at Black Rock Nature Center*

Joshua Tree is one of the best escapes in south California to view the natural night sky. But light pollution is an ever growing threat on the horizon. How do we measure dark skies in Joshua Tree? How does light pollution impact the park? Immediately following Ranger Stacy's presentation, join Park Ranger Sara Sutton for a conversation about dark skies and your own personal experiences with them.

## **"Cosmic Horizons" with Angie Richman**

*3:00 pm Sunday at Black Rock Nature Center*

From a little kid on a trampoline in the backyard to astronomers like Galileo and Hubble, we have all been inspired by a night sky full of stars. Let's take a walk through human history to see how the cosmos shaped our world and what might be on the cosmic horizon.



## Bring Along:



Only bring **red lights**. No white lights. Keep your cell phones off and tucked away. This is very important for protecting your night vision. You can make a regular flashlight into a red light by covering it with red cellophane, tape, red fabric, red construction paper, etc. Most outdoor stores sell red lights and red headlamps. Seating is limited at Sky's the Limit; **bring a lawn chair** or blanket for your comfort. There is no water at most event locations. Please plan ahead by bringing what you need, but do not eat or drink around the telescopes. They are fragile. Be careful not to bump or jostle the telescopes. A scope operator can adjust the view for you. Bring extra layers of warm clothes. Temperatures drop quickly in the evening.

## Leave Behind:



## FEATURED SPEAKERS



### Dr. Jay Cravath

#### Composer, Writer, and Cultural Director of the Chemehuevi Indian Tribe

Dr. Jay Cravath's programs involve discussions, stories, musical performance and dance. His publications include *North American Indian Music*, *The Mohave Book for Little Ones*, and *The Chemehuevi Book for Little Ones*. Having been on the Arizona Humanities Council Speakers Bureau since 1992, he has performed at festivals, libraries and museums.



### Dr. Tyler Nordgren

#### Author, Artist, and Professor of Physics and Astronomy at the University of Redlands

Dr. Tyler Nordgren is a Professor of Physics and Astronomy at the University of Redlands. He has helped design "Marsdials," one which landed on Mars and the other that is onboard NASA's newest rover, Curiosity. His book *Stars Above, Earth Below: A Guide to Astronomy in the National Parks* was funded by the Planetary Society. In 2011, Dr. Nordgren was elected to the Board of Directors of the International Dark-Sky Association.



### Kevin Poe

#### Dark Ranger

Kevin Poe has degrees in Forestry and Recreation and Resource Management from Utah State University. He has more than 18 years of astronomy experience and has led telescope and astronomy programs in Bryce Canyon and other national parks throughout the country.



### Dr. Julie Rathbun

#### Professor of Physics, University of Redlands; Senior Scientist, Planetary Science Institute

Dr. Julie Rathbun earned her PhD in astronomy from Cornell University in 1999 and has worked as an astronomer at Lowell Observatory. Her research focuses on moons in the outer solar system, with the moons of Jupiter as her favorites. She is currently a member of the steering committee for NASA's Outer Planets Assessment Group.



### Angie Richman

#### Astronomy and Climate Change Consultant

Angie Richman received a BA in Astrophysics from the University of New Mexico with a minor in Archeology, emphasizing Cultural Astronomy. She worked for the National Park Service for over 15 years, most recently as the Communication Specialist for the Climate Change Response Program. As a ranger, her programs are infused with astronomy, a personal sense of place within the universe, and love of a starry sky.

**Thank You to Our Partners** Joshua Tree National Park would like to thank our guest speakers, Sky's the Limit, the Joshua Tree National Park Association, the Desert Institute, Celestron, Dark Ranger Telescope Tours, Riverside Astronomical Society, San Bernardino Valley Amateur Astronomers, the Astronomical Society of the Desert, and Grand Canyon National Park.



FIND YOUR  
**PARK**

The National Park Service, steward of Joshua Tree National Park and over 400 other park sites around the country, celebrates its 100th birthday in 2016. The 2015 Joshua Tree National Park Night Sky Festival kicks off our celebration of the NPS Centennial by bringing together astronomers, scientists, cultural speakers, night-sky enthusiasts, artists, volunteers, junior rangers, and members of nearby communities to celebrate the night skies of Joshua Tree National Park.